

EVERYTHING I LEARNED FROM THE SIMS™: PUTTING GAMES IN CONTEXT

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ABSTRACT

Integrating new technologies into the curriculum has always been difficult. Despite the recent technological advances in computer games, the rapid growth of the industry and the number of hours spent playing games, computer games have not been integrated into our education system. We examine different ways games can be used in teaching, describe the barriers and propose solutions.

KEYWORDS

Educational Computer Games, Computer Games in K-12 Curriculum, Teaching and Learning Strategies

1. GAMES ARE IMPORTANT

One of the main challenges education research is keeping in pace with new technologies and integrating them into the curriculum. In the last twenty years, computer games have expanded from Pong style arcade games to complex multiplayer simulations with photo-realistic graphics that can generate revenues up to \$125 million in the first twenty-four hours on store shelves (Chairman, 2004). In US, computer games is an \$11 billion dollar industry, generating more revenue than US movie box office sales. In comparison, the US Department of Education has a total budget of \$60 billion (Education Department Budget History, 2004). Game companies are large software production houses employing programmers, modelers, storytellers, directors, designers, artists in addition to the usual corporate personnel. Gaming industry and game companies are growing at a higher pace than their industry counterparts. Electronic Arts, which is already bigger than Apple and Pixar combined, is hiring one thousand new employees each year (Pausch, 2004). Already one in four households in US own a Sony Playstation (Sony Press Release, 11 May 2004).

One of the common misconceptions about games is that they are only played by male teenagers. In fact, half of all Americans aged six and over play computer and video games, average game buyer is 36 years old and 39% of game players are women (Entertainment Software Association Press Release, August 2003). One of the fastest growth areas in games is massively multiplayer online role-playing games (MMORPGs). The total number of MMORPG subscribers is over 3 million (MMORG Chart, <http://www.mmogchart.com/>). In another study, Yee (2004) found the average age of MMRPG player to be 26, only 25% of players is teenagers, and on average an MMORPG player plays about 22 hours per week. Computer games are a significant leisure activity for a large number of people regardless of whether they consider themselves hard-core gamers or occasional web-gamers.

Educational software has a long history of incorporating game-like elements in recognition of the fact that without a supervising teacher one of the best ways to keep students interested is in make the experience fun. Intelligent tutoring systems first started in 1970s and have been used in teaching physics, geography, management, new languages and a variety of other topics. Despite a number of successful prototypes, none of the ITSs have been widely adapted in schools. A much more successful integration of games and

education has been achieved in *edutainment* software, such as Reader Rabbit and The Magic School Bus, aimed at younger children. The repeated drill and practice approach taken by these programs becomes more bearable and effective when embedded in the game context. In the last five years, there has been an increased interest in using existing game engines for training and education. University of Southern California has created programs to teach leadership skills, Arabic and collaboration in complex dynamic environments.

Unfortunately, most educational games end up looking like infomercials which quickly turns students away. Educational games tend to be low-cost, low-quality productions trying to take a pedagogically sound approach while still being entertaining and often failing at both. Although Adams (2005) provides a list of concrete suggestions to make games both fun and education, it is not clear how this can be achieved within current educational funding structures.

2. EDUCATIONAL GAMES

Interactive entertainment is an area that educators cannot afford to ignore. There are three approaches we can take in terms of games: 1) We can *make* educational games from scratch; 2) We can *extend* existing games to suit our needs or 3) We can *use* existing games without any modification, provide a context and framework for analyzing and studying them. While there are advantages to each option, I will argue that we can get the most leverage by *using* the game as is, by setting up a social and knowledge perspective to play and examine the game.

Making games has the distinct advantage of having full control over the interaction. The pedagogical approach can be carefully considered and various approaches tested on focus groups. The amount of fun can be decided on how the game will be deployed, whether it is meant as an independent study or a part of the classroom activity. Creating a new game from scratch is also the most resource intensive approach. Education has never and will never be funded at the level of entertainment. The funds required to create a new game will dwarf all other education projects resulting in very high expectations on the educational value of the game. The justifications for creating a single game instead of funding additional teachers will be difficult to argue for policy makers. Without the appropriate investment, attempting to create a game will end up with an unpolished, rough prototype that may still be usable, but is not in the same league as games. The result will be looked down upon by students since they can get a better game from their corner electronics store.

Creating a game from scratch is feasible under certain situations. First, US military has a long history of funding innovative training and education programs. The funds for developing a training game will be a small percentage of the overall budget and can be regarded as future investment. Second, games can be created in an educational context with very little funding where the real purpose is to provide students with development experience rather than producing a product that will be inherently attractive and educational. In this case, although the goal given to the students is game creation, the educational goal is experience that students will gain through its production. Third, games that are intended as pieces of art can still be created with limited funds. These games are expressions, reflections of the society and the artist, and may not require extensive funds.

Extending games has the advantage of building on top of existing technology. The resources required will depend on the type and level of extension, from simple modding to creating new intelligent characters and scenarios. Most academic research has fallen into this category using the engines from Unreal Tournament and other games to create new scenarios. In fact, even some of the US military has taken this more budget conscious road (*Leaders* project at USC/ICT). The game engine becomes both a limiting factor and gem to build on. The success of the extension is often dependent on finding an appropriate engine and making the right set of compromises along the way.

Using a game as is without making any changes to it looks like the most restricted choice at first glance, yet it offers some interesting possibilities. First, it takes educators out of the competition to create games of commercial quality. It is a fight we cannot win, so not entering the race is the best choice. Next, it allows us to step back and look at games as social artifacts and put them in the same category as books, film and various pieces of art. Once we adopt this perspective of games as social artifacts, creating or extending a game looks like unnecessary competition to become an author, a director or an artist. Just like all books are not pieces of great literature that we should be studying in schools, all games are not worthy of our attention

either. We can be selective about what games we study and which aspects of those games are important to bring into the educational sphere. Looking at how popular films have been incorporated into the curriculum provides a good starting point. Providing a list of books as *summer reading* has become part of the standard curriculum in K-12 (kindergarten to end of high-school) education; providing a list of *summer games* will be an easy extension.

Students currently spend more time playing games than doing homework. In fact, surveys show that game playing is not a *phase*, once started players continue to play games. Each year the age of average game player is increasing not because more older people are getting into games, but because the gaming population is aging. The likelihood of a teacher to play a game is most directly correlated with their age than with any other factor. The implications of this trend should be clear. In twenty years time, both students and teachers will be spending a large percentage of their free time playing games. Their common experience will be around games and various forms of interactive entertainment rather than books, films, sports or any other cultural artifacts. Embracing games as a part of the curriculum is an investment into making future education relevant.

This approach changes the role of games from teaching tools to objects that need to be studied. The popularity of games is already a good enough reason to study them, but there are other lessons embedded in games everything from commonsense psychology to landing planes in windy conditions. For example, a recent game that created a lot of anger in both the games community and from the general media is *JFK Reloaded* (<http://www.jfkreloaded.com/>) where the player attempts to fire three shots at Kennedy's motorcade attempting to replicate Oswald's shooting of JFK. The company even offers a reward of up to \$100,000 for the player who can most closely match the shooting. Although the game has been described as despicable and outrageous, historical reconstructions and reenactments have been used as educational tools in the past. The difference is that the game does not provide much of a historical context, instead encouraging the player to "think like a sniper". The challenge for educators is not how to prevent students from playing this game, which is not possible due to the distributed nature of the internet, but rather how we can provide a context, understanding as well as the limitations of historical reconstructions to place the game in an appropriate context, a potential political statement by the creators on the impossibility of the single shooter scenario.

Games come in all size, shape and color. Not all games have complex rules or lessons that need to be extracted. Solitaire, Tetris, Pong, Breakout, Mine Sweeper and many other games provide minimal context for the game, there is very little or no social lessons that can be extracted from the games. Other games, such as Halo, Grand Theft Auto, Sim City, Everquest, Civilization and World of Warcraft present complex worlds with intricate rules that can be studied in depth.

3. A CRITICAL LOOK AT THE SIMS

I will examine The Sims as an example of a popular game. The Sims is produced by Maxis/Electronic Arts in 1995. It is widely acknowledged as one of the best game designs and has appealed equally to boys and girls. The best way to describe The Sims is as a virtual dollhouse. The player gets to choose characters, design a house with a large variety of objects and then guide the semi-autonomous characters to get a job, make friends, fall in love and even have babies. The player constantly has to make decision between having the characters entertain themselves, through watching TV, or attend to necessary house chores such as cleaning, gardening, cooking, or develop the character's skills to enable them to get better jobs which in turn will make it possible for the player to get more expensive furniture for the house.

The list of cultural values that the player learns from The Sims is too long to list here, but it can be classified in five major categories: people, objects, actions, relationships and constraints. Playing the game, one quickly learns that people are different, not every Sim enjoys the same activities, all people have basic needs such as entertainment, socialization, sleep and hunger and that Sims will refuse to do chores when they are in a bad mood. Examining the large variety of object, each with their own price tags, the player quickly learns that most expensive things provide higher quality enjoyment, but at the same time having lots of objects around the house means a lot of time will be spent on fixing items as well. Decorative objects such as art and plants can increase the value of the room while garbage and dirty dishes will lower the value of the room. Actions have both short term and long-term consequences, a Sim can find a job through the newspaper

of the computer. If the Sim misses her job too often, she will be fired. Developing skills in ones spare time leads to faster promotions. Managing the sims is about shuffling priorities between work, entertainment, social time, developing skills, paying bills and purchasing new objects.

A game can be played at many levels, just like a book can be read at different depths. The goals the player has before the game and the critical analysis of the game afterwards determine the type and quality of learning. A game like The Sims can be used to teach and reinforce our understanding of commonsense psychology, the way people think they think. Hobbs and Gordon and (2005) identify thirty representational areas of commonsense psychology. The activities in The Sims cover all but one of the areas identified by Gordon and Hobbs. While playing The Sims is not sufficient to develop and learn commonsense psychology, The Sims does provide a wide coverage and can enable discussions on any topic.

The Sims is not unique and many other games can be used for educational purposes without requiring any modification. Halo and other multiplayer games provide peer-to-peer learning, Civilisation III can be used to explain world history and how innovations and ideas build each other, SimCity can be used to discuss choices between public and private transportation, tax rates and how to create industrial and residential zones in a city.

4. GAMES IN CURRICULUM

There are a number of barriers that must be overcome before games can be integrated into the curriculum. First, computer games and simulation environments are good at delivering complex, dynamic open-ended problems. In comparison, traditional education focuses on learning of facts. As a result, edutainment programs that use and drill-and-practice approach have been readily accepted into the existing educational system whereas games involving complex dynamics have not successfully entered the educational realm.

The educational community is increasingly shifting from lecture-format subjects to formats that require students to exercise the ideas they are learning either in team projects, problem solving, role playing or direct involvement with actual development. Even the recent entry of large high profile projects including the Microsoft iCampus initiative with the Comparative Media Studies department at the Massachusetts Institute of Technology Games-to-Teach project (Education Arcade, <http://www.educationarcade.org/gtt/>), and the Computer Games in Education (CGE) project (<http://www.becta.org.uk/>) as part of the British Educational Communications and Technology Agency (BECTA) software initiative is seen as specialized effort and not necessarily a change in approach.

Being a teacher in a K-12 setting involves much more than competently delivering the material. Teachers are often seen as all-knowing and are treated as ideal role models. Even part of the authority of the teacher comes from their extensive knowledge. Using computer games as a part of the curriculum changes the dynamic. Not only are most teachers not computer game players, but even if they are they will most likely not be able to keep up with the new games as much as the students do. Students who are often part of a community of gamers will have the support networks that teachers will lack. For twitch games where reaction speed is crucial, the younger students will perform much better than school teachers. This change in balance of power is perhaps the most important concern that needs to be addressed.

A further barrier for games is the rapid change in the popularity of games and platforms. In comparison, changes in educational curriculum often take decades. Teachers often use the same textbook for multiple years. Playing the exact same computer game for multiple years is often rare, and both games and the hardware they run on can become obsolete within a short timeframe.

In overcoming these barriers, it is instructive to examine the area of film studies where popular movies, such as "Supersize Me", have been integrated into the curriculum along with classics. Similarly in the area of literature, contemporary and popular novels form a significant part of the English curriculum. The same approach can be used in incorporating games into the curriculum by identifying a staple of classics with a mix of popular ones. It is important to note that just like all books are not worth studying, all games are not worth studying either.

Once a set of games are chosen, it is critical to develop a methodology that will get the most benefit out of them. The goal is not to play or win the game, but to examine the rules of the game, understand its cultural setting, analyze how it is structured. Games are designed to be seductive, so setting up the appropriate tasks

to be achieved from the game is critical; otherwise, it would be easy to play a game for hundreds of hours with no obvious educational benefit.

Games are designed as complex interactive spaces and fit with the constructivist educational approach that most teachers strive for. In K-12 education, physics, biology and chemistry are identified as experimental sciences. The labs associated with these subjects allow students to setup experiments to test and verify hypotheses. In comparison, history, art, music and math are treated as sets of facts and rules to be mastered and followed. Use of computer games in the curriculum can elevate these subjects, so students can understand the complex interactions of dynamic systems and develop problem solving skills in these contexts.

Teamwork has been gaining importance in the last decades with teams rapidly forming and dissolving to achieve a given task. While individual skills are still important, managing and working in teams is often seen as a more important quality. Games are naturally collaborative spaces. The caricature of the teenage boy playing all by himself on a computer is terribly misleading. First, most games require explicit teamwork. Next, for games that don't require teamwork unless the player talks about the game and discusses alternatives with other players, her skills will remain limited. In fact, finding and sharing information about a game naturally creates an "in" group. Membership to these elite groups is valued highly. In fact, a recently published article from Microsoft shows the great lengths kids will go to create their own secret language (Microsoft, A parent's primer to computer slang, 4 Feb 2005).

5. CONCLUSION

We have argued the importance of games and why computer games cannot and should not be ignored as an educational tool. We have examined different ways of integrating computer games into the curriculum and argued that the efforts of educators should be directed not to create or modify games, but to create a social and methodological framework where games can be analyzed. While there are significant barriers for incorporating games into the curriculum, we can successfully borrow techniques from other disciplines.

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